

In the Claims:

1 **1.** (original) A method for determining the distance between
2 two transmitting and receiving stations, which communicate
3 with each other by transmitting data telegrams comprising
4 at least one data bit, characterized in that

5 at least three data telegrams are transmitted
6 alternately between the transmitting and receiving stations
7 to each data bit of the at least three data telegrams
8 during reception of the data telegram concerned a counter
9 value (C_{A1} , C_{B1}) is allocated, which corresponds to the
10 counter state of a free-running counter (MC) at the time of
11 reception of the respective data bit,

12 to each of the at least three data telegrams a counter
13 sum (S_1 , S_2 , S_3 , ..., S_j) is allocated, which corresponds to the
14 sum or the average value of the counter values (C_{A1} , C_{B1})
15 determined during reception of the data telegram concerned,

16 and a sum number (S_s) is formed by weighted summation
17 of the counter sums (S_1 , S_2 , S_3 , S_4) as an indicator of the
18 distance between the transmitting and receiving stations.

1 **2.** (original) A method according to claim 1, characterized in
2 that for determining the sum number (S_s) the counter sums
3 (S_1 , S_2 , S_3 , ..., S_j) are weighted with a binomial coefficient
4 which corresponds to their sequence.

Claims 3 to 11 (canceled).

- 1 **12.** (new) A method according to claim 1, characterized in that
2 informations on the counter sums (S_1 , S_3) determined in the
3 one transmitting and receiving station are transmitted as
4 data telegrams to the other transmitting and receiving
5 station.
- 1 **13.** (new) A method according to claim 1, characterized in that
2 four data telegrams are evaluated for determining the
3 distance.
- 1 **14.** (new) A method according to claim 1, characterized in that
2 the data telegrams each comprise the same number of data
3 bits.
- 1 **15.** (new) A method according to claim 1, characterized in that
2 a pause of a given duration is observed between the
3 transmitted data telegrams.
- 1 **16.** (new) A transmitting and receiving station for carrying out
2 the method according to claim 1, with
3 a transmitting and receiving antenna (ANT) for
4 receiving the received signal (Rx) and for transmitting a
5 transmission signal (Tx),
6 a receiver arrangement (R) for converting the
7 frequency of the received signal (Rx) and for detecting
8 data bits from the received signal (Rx),

9 a transmitting arrangement (T) for producing the
10 transmission signal (Tx) from a sequence of data bits to be
11 transmitted at a given bit timing (Tbit),

12 a counter (MC) clocked at a given time clock (Tclk)
13 for producing the bit timing (Tbit) as time distance
14 between successive counter state overflows,

15 a register (L) for taking over the counter state of
16 the counter (MC) each at the time of reception of a data
17 bit and for providing the assumed counter state as counter
18 value (C_i).

1 **17.** (new) A transmitting and receiving station according to
2 claim 16, characterized in that a pulse width modulator
3 (PWM) clocked as per the indicator of the bit timing (Tbit)
4 is provided for producing a binary transmitting data signal
5 (DTx) from the data bits to be transmitted and in that the
6 transmitting data signal (DTx) is supplied to the
7 transmitting arrangement (T) for producing the transmission
8 signal (Tx).

1 **18.** (new) A transmitting and receiving station according to
2 claim 16, characterized in that a switch (SW) is provided,
3 via which the transmitting and receiving antenna (ANT) is
4 conductively connected alternatively with the receiver
5 arrangement (R) or with the transmitting arrangement (T).

1 **19.** (new) A transmitting and receiving station according to
2 claim 16, characterized in that a digital control unit, in

3 particular a microcontroller (μC) is provided for
4 evaluating the counter values (C_1) and for providing the bit
5 information to be transmitted.

1 20. (new) Use of the method according to claim 1, in a keyless
2 locking system for motor vehicles for determining the
3 distance between a first transmitting and receiving station
4 provided in the motor vehicle and a second transmitting and
5 receiving station provided in a key module.

[REMARKS FOLLOW ON NEXT PAGE]